



Rite Stats

Analysis of Rite Care Utilization Data

Rhode Island Department of Human Services
Center for Child and Family Health

Asthma Surveillance in Rite Care—1998-2002

Director's Message

Asthma is one of the most common chronic diseases affecting the Rite Care population and is currently the subject of several state and national public health initiatives including eight of the Healthy People 2010 objectives.¹ There is overwhelming evidence that appropriate primary care can reduce morbidity and mortality from asthma-related illness as well as minimize asthma-associated limitations in activity. It is hoped that by monitoring asthma-related services more closely, we can assure timely and appropriate care.

Best regards,
Jane A. Hayward, Director
Department of Human Services

Background

National trends in asthma occurrence are monitored using several sources including the Behavioral Risk Factor Surveillance System (BRFSS), the National Health Interview Survey (NHIS), the National Ambulatory Medical Care Survey (NAMCS), the National Hospital Ambulatory Medical Care Survey (NHAMC), and the National Hospital Discharge Survey (NHDS). Estimates based on the BRFSS and the NHIS are based on self-reported responses to specific questions from a random sample of the civilian non-institutionalized population. Physician office visits, visits to the emergency department (ED) and inpatient admissions related to asthma are monitored using the NAMCS, NHAMC, and the NHDS datasets.

Clinically, asthma is variously defined as an inflammation of the airways characterized by "wheezing, shortness of breath, chest tightness, and cough".² Defining asthma using administrative datasets usually involves International Classification of Disease 9th Revision (ICD-9) codes of 493 as either the primary or one of the secondary diagnoses listed on the claim. In addition, some estimates are based on the number and types of prescription drugs written within a specified period of time or some combination of outpatient visits and prescriptions filled.

The National Committee for Quality Assurance (NCQA) defines *persistent asthma* as having at least four outpatient visits with asthma listed as any of the diagnoses treated and at least two pharmaceutical dispensing events.³ Other definitions require only one outpatient visit with asthma listed as the primary diagnosis treated. For the purpose of this report, we are tracking any

asthma related service (outpatient, ED or inpatient) with asthma listed as any of the diagnoses treated. In addition, we include any patient with at least two pharmaceutical dispensing events for an asthma defined drug. (Please keep these case definition differences in mind when comparing these results to other published material.)

Definitions which require asthma as the primary diagnosis or require multiple visits with prescription activity are better estimates of how the disease of asthma is being treated in the Program. Broader definitions, such as the one used here, are better estimates of the overall burden of disease on ambulatory services, hospital utilization and prescription drug use.

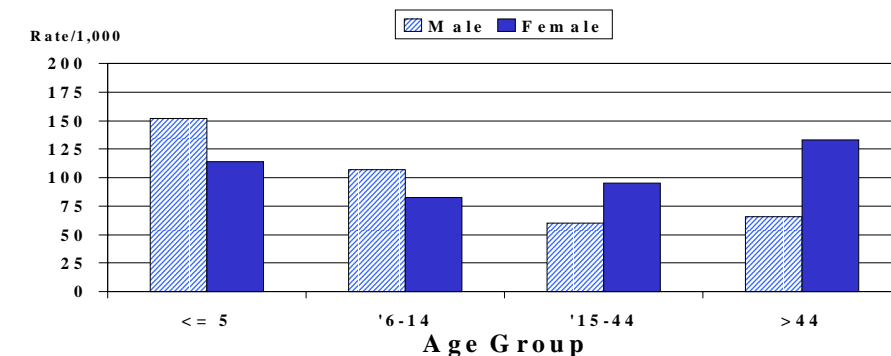
Ambulatory Services

Approximately 10.5% of the Rite Care population received some type of ambulatory diagnostic or therapeutic service related to asthma during state fiscal year (SFY) 2002 (see Figure 1). Such services would include patients who received any outpatient office visit (routine, acute or diagnostic) with asthma listed as any of the diagnoses treated as well as patients who received any laboratory or radiology procedure with asthma listed as one of the diagnoses. In addition, patients who received any supplies or equipment (such as nebulizers) or filled at least two prescriptions for asthma related drugs during SFY 2002 were also included in Figure 1 (see Technical Notes for more detailed description).

Rates vary from about 60 per 1,000 among males 15-44 to just over 150 per 1,000 among boys five and under. The rates are higher for males in the under 15 age groups and higher among females in the 15 and older age groups. Utilization rates appear to level off among males after age 15 while among women the rates rise after age 15.

National data indicate that lifetime prevalence of asthma in the general population is about 10 percent and varies considerably by age and region of the country.⁴ Rates are higher among the younger age groups (declining after about age 15) and higher in the northeast than other areas of the country. Furthermore, national rates are higher among women and minorities than among males and whites.

**Figure 1. Rite Care Members Receiving any Asthma Related Service by Age Group and Gender:
Rate per 1,000 Members.
(State Fiscal Year 2002)**



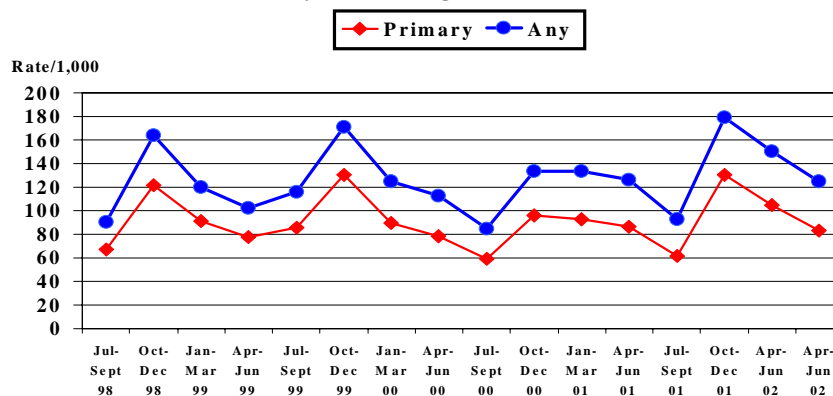
n=12,614 members receiving any asthma related treatment or therapy

Outpatient visits with asthma listed as the primary and secondary diagnosis are shown in Figure 2 by quarter from July-September 1998 through April-June 2002. (Quarterly rates have been

annualized by multiplying by 4). For the most part, rates of asthma as the primary diagnosis (which is the rate most closely comparable to national data) vary between about 80 and 120 visits per 1,000 Rite Care members with a couple of dips as low as 60 per 1,000 and a couple of peaks over 120 per 1,000 population. Otherwise there is a very pronounced seasonal pattern in asthma utilization rates with high utilization occurring during the October-December months and low utilization occurring in the summer. Rates of asthma treated as any of the diagnoses listed followed the same seasonal pattern and varied from a low of about 80 per 1,000 to a high of about 180 per 1,000.

Figure 2. Quarterly Ambulatory Office Visits with Asthma listed as the Primary Diagnosis or with Asthma listed as Any Diagnosis.

(July 1998 through June 2002)



Note: Quarterly rates are annualized by multiplying by 4.

Overall, asthma utilization rates in Rite Care are considerably higher than national general population rates for asthma listed as the primary diagnosis. National rates usually varies between 50 and 55 visits per 1,000 per year.⁴ However, since asthma is more common among children and in the northeast, one would expect Rite Care rates to be higher than national estimates for environmental and demographic reasons.

The total Rite Care expenditure for asthma-related outpatient services during SFY 2002 was about \$3.4 million; \$1.1 million was for outpatient visits and diagnostic testing and \$2.3 million for prescription drugs (data not shown). Equipment and supplies (such as nebulizers) for asthma were among the most expensive per unit costs averaging about \$80.00 with a total expenditure of \$155,789. Prescription drugs averaged about \$40.00 per prescription.

Finally, the elevated utilization rates for asthma-related services among women in the 45 and older age group in Rite Care is an important trend to follow. Recent studies have shown that asthma prevalence is increasing in this population due to a variety of clinical, physical and social factors.⁵ Many of our current initiatives are geared toward children and may be missing this important population.

Hospital Services

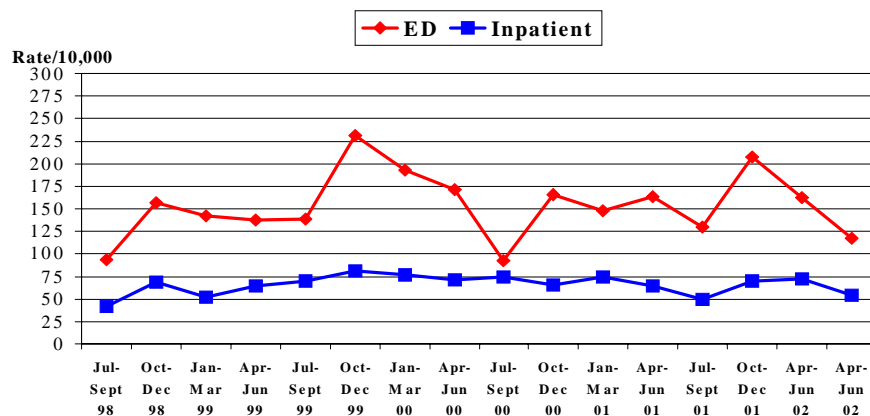
ED visit rates and inpatient admission rates with asthma listed as any of the diagnoses treated are shown in Figure 3 by quarter from July-September 1998 through the April-June quarter 2002. Note that these rates are calculated per 10,000 population (as oppose to 1,000 for the outpatient

visits) and that quarterly rates have been annualized by multiplying by 4. Consequently, each quarterly rate is an estimate of what the annual rate would have been if that quarterly rate had occurred all year.

There is considerably more variation in the ED utilization rates than in the inpatient admission rates. ED utilization has varied from a low of about 100 visits per 10,000 as recently as the July-September 2000 quarter to a high of over 225 visits per 10,000 during the October-December 1999 quarter. ED utilization in RItE Care for asthma as the primary diagnosis is somewhat lower than national estimates for the northeast.⁴

Figure 3. Quarterly Emergency Department (ED) and Inpatient Admission Rates for Patients Treated for Asthma.

(July 1998 through June 2002)



Note: Quarterly rates are annualized by multiplying by 4.

Inpatient utilization, on the other hand, has remained fairly constant over the past several years in RItE Care varying between 50 and 75 admissions per 10,000. Nationally, inpatient admissions for asthma as the primary diagnosis have been declining somewhat in recent years although the rates in the northeast are somewhat higher. Asthma-related admission rates in RItE Care are comparable to national rates in the northeast.⁴

In terms of costs, there were a total of 1,935 ED visits during SFY 2002 with an average cost of \$306.44 and a total expenditure of \$593,000. Inpatient admissions, on the other hand, averaged \$3,126 per admission (n=771) for a total expenditure of \$2,409,827 during SFY 2002. The average length of stay among inpatient admissions for asthma was 3.02 days which is not significantly different from other admission types in RItE Care.

Pharmaceutical Management

Overall, there were a total of 58,209 prescriptions filled for asthma-related drugs during SFY 2002 for 15,895 RItE Care members. The average number of prescriptions filled was 3.7 among members who filled at least one prescription. On the other hand, there were 8,897 members who filled at least 2 prescriptions during the fiscal year (see case definition).

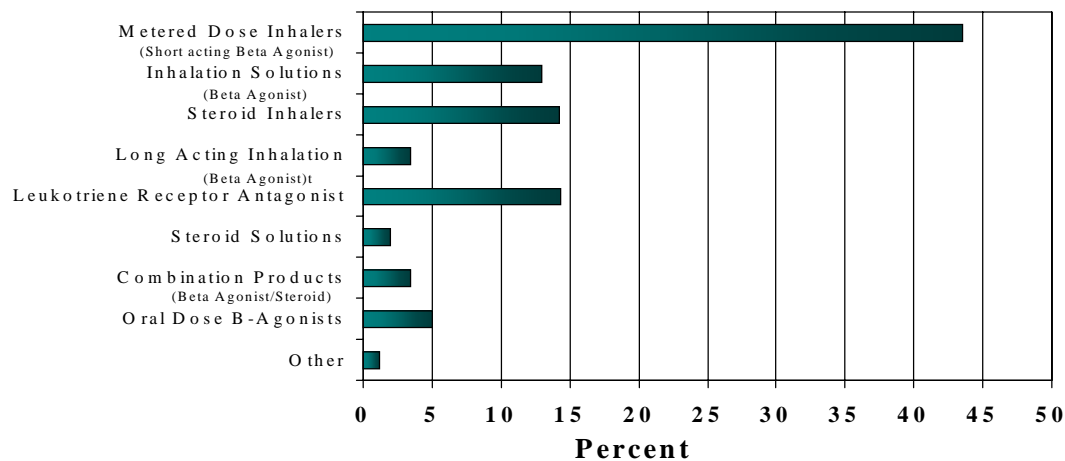
Albuterol, in the form of a metered dose inhaler (MDI), is by far the most common pharmaceutical used for asthma treatment in RItE Care constituting 43.5% of all asthma-related prescriptions filled (see Figure 4). It is also one of the less expensive medications with an

average cost of just under \$20.00. Steroid inhalers (such as Flovent®) are also very common accounting for almost 15% of all asthma-related prescriptions and averaging about \$65.00 per prescription. Similarly, leukotriene receptor antagonists (such as Singulair®) account for almost 15% of all asthma-related prescriptions filled and average about \$75.00 per prescription.

Other Beta-Agonists (in the form of pre-mixed inhaled solutions) are also common and moderately priced asthma treatments accounting for about 12.5% of all asthma-related prescriptions filled and averaging about \$17.00 per prescription. Combination products (i.e., beta-agonists/steroids) are fairly expensive treatments averaging over \$100.00 per prescription but constitute less than 5% of all prescriptions filled. Steroid solutions, (i.e., Pulmicort® Inhalation Suspensions) are perhaps the most expensive drugs (average cost about \$120.00) but only account for about 2% of all asthma-related prescriptions filled. Mast cell inhibitors are included in the *Other* category which accounts for less than 2% of all prescriptions filled.

It should be noted that these data represent only prescriptions filled (as opposed to medications prescribed or patients treated with various drugs). Also, these data do not indicate compliance (i.e., medications taken). Future studies might take a closer look at prescribing patterns and treatment efficacy.

Figure 4: Prescriptions Filled for Medications Used in the Treatment of Asthma by Category: Percent of All Asthma-Related Prescriptions Dispensed. (SFY 2002)



Note: See Technical Notes for detailed classification scheme.
n=58,209 prescriptions

Comment

National estimates suggest that approximately 10% of the civilian, non-institutionalized, population self-report a lifetime prevalence of asthma while about 6% report an attack or asthmatic episode in the past 12 months. In terms of utilization, on the other hand, about 5% of the population receive an outpatient office visit with asthma listed as the primary diagnosis. In the northeast, there are between 100 and 120 ED visits per 10,000 population per year in the

general population while inpatient admissions occur at a rate of about 25-30 per 10,000 population.

Overall, RItE Care compares favorably with national benchmarks for utilization. There is a much higher rate of outpatient services in RItE Care owing to the fact that we include asthma diagnoses listed in any of the diagnostic slots (as oppose to only the first) and the RItE Care population is disproportionately populated with people at risk for developing asthma (e.g., children).⁴ Approximately 10.5% of the RItE Care population received some diagnostic or therapeutic service related to asthma while ED utilization in RItE Care is considerably lower than national benchmarks adjusting for region. Asthma-related inpatient admissions in RItE Care have been fairly constant over the period under study and are similar to national rates which vary between about 25-30 admissions per 10,000 population. Prescription drugs are a common method of treatment for asthma as 15,895 members received at least one asthma related drug during SFY 2002 and 8,897 members had at least two dispensing events. This analysis shows that \$6.4 million in RItE Care expenditures were related to treating asthma including inpatient admissions and prescription drugs during SFY 2002.

Developing reliable asthma surveillance systems is a key component of proper oversight and monitoring of this disease.⁶ Future research might focus on better measures of disease severity and estimates of how well asthma is controlled in this population. Also, additional follow-up is required on adult-onset asthma especially among women 45 and over.

References

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Technical Notes

Data for this report are based on Encounter Data files submitted to the State by the Health Plans on a quarterly basis. Outpatient visits are defined using Current Procedural Terminology (CPT) codes as listed on HCFA-1500 forms. Hospital facility services (such as ED visits and inpatient admissions) are defined using Revenue Codes as appear on a UB-92 form. ED visits exclude cases where the patient is admitted to the hospital.

A diagnosis of asthma on either type of claim is defined by International Classification of Disease 9th Revision (ICD-9) codes of 493.xx (i.e., 493 with any fourth or fifth digit).

Prescription drugs were classified using NDC codes and therapeutic class.

The list of asthma related medications is based on NDC codes and taken from the National Committee for Quality Assurance.³

Program Description

RItE Care is the State of Rhode Island's managed health care program for families on Medicaid, uninsured families with incomes up to 185% of the Federal Poverty Level (FPL), uninsured pregnant women and children under 19 from families with incomes up to 250% of the FPL. Eligible individuals are enrolled in a managed care organization (Health Plan) which is paid a monthly capitation for providing or arranging health services for members. The program was designed to improve access to health care by providing each member with a 'medical home' in the form of a primary care provider (PCP).

A comprehensive plan for evaluating RItE Care has been implemented by the Center for Child and Family Health. Health Plans are required to submit data to the State on all services provided to members each quarter. These files are edited extensively according to predetermined criteria⁷ and become the foundation for most oversight activities. In addition, data are periodically validated against claims and medical records. Other evaluation activities include an annual member satisfaction survey, on-site review of Health Plan policies and procedures, selected focus groups, and a variety of health outcomes research.

RItE Stats is a bimonthly publication of the Center for Child and Family Health and is intended to provide information to the public on the health care provided in the RItE Care Program. It is edited by Bill McQuade, MPH with support from the Center for Child Health staff. Comments and inquiries are encouraged and should be sent to:

Bill McQuade, MPH
Editor: RItE Stats
Center for Child and Family Health
600 New London Avenue
Cranston, RI 02920
(401) 462-3584
e-mail: wmcquade@dhs.ri.gov

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